

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NC-296-X	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2005/001518	International filing date (<i>day/month/year</i>) 02.02.2005	Priority date (<i>day/month/year</i>) 09.02.2004
International Patent Classification (IPC) or national classification and IPC A61K31/501, A61P9/00, 9/10 // C07D401/12		
Applicant NISSAN CHEMICAL INDUSTRIES, LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																					
1. Statement	<table><tbody><tr><td rowspan="2">Novelty (N)</td><td>Claims</td><td><u>1-5</u></td><td>YES</td></tr><tr><td>Claims</td><td></td><td>NO</td></tr><tr><td rowspan="2">Inventive step (IS)</td><td>Claims</td><td></td><td>YES</td></tr><tr><td>Claims</td><td><u>1-5</u></td><td>NO</td></tr><tr><td rowspan="2">Industrial applicability (IA)</td><td>Claims</td><td><u>1-5</u></td><td>YES</td></tr><tr><td>Claims</td><td></td><td>NO</td></tr></tbody></table>	Novelty (N)	Claims	<u>1-5</u>	YES	Claims		NO	Inventive step (IS)	Claims		YES	Claims	<u>1-5</u>	NO	Industrial applicability (IA)	Claims	<u>1-5</u>	YES	Claims		NO
Novelty (N)	Claims		<u>1-5</u>	YES																		
	Claims		NO																			
Inventive step (IS)	Claims		YES																			
	Claims	<u>1-5</u>	NO																			
Industrial applicability (IA)	Claims	<u>1-5</u>	YES																			
	Claims		NO																			
2. Citations and explanations (Rule 70.7)	<p>The written opinion was formed based on the following documents cited in the international search report.</p> <p>Document 1: WO 91/16314 A1 (Nissan Chemical Industries, Ltd.)</p> <p>Document 2: JP 7-252237 A (Nissan Chemical Industries, Ltd.)</p> <p>Document 3: WO 00/33845 A1 (Nissan Chemical Industries, Ltd.)</p> <p>Document 4: JP 9-157258 A (Otsuka Pharmaceutical Co., Ltd.)</p> <p>Document 5: Kenji Uehara, Masao Kimura, The Cell, 1998, 30(5), pages 197 to 200</p> <p>Document 6: Mitsugu Hachisu et al., Folia Pharmacol. Jpn., 1998, 122, pages 267 to 274</p> <p>Document 7: Kimura, Y. et al., J. Pharmacol., 2001, 85 (Suppl. 1), No. S36-1</p> <p>Claims 1 to 5</p> <p>The claims and embodiments of documents 1 and 2 set forth a pyridazinone derivative as a compound having platelet aggregation inhibiting activity, and document 3 (claims; embodiments; page 6, lines 9 to 14; page 24, line 10 to page 25, line 1) sets forth a pyridazinone</p>																					

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

derivative as a compound having PDE III inhibiting activity. Comparing the invention set forth in claims 1 to 5 of this application with the inventions set forth in documents 1 to 3, the two differ in that the specific application of the former lies in inhibiting vascular intimal hyperplasia.

However, document 4 (claims; embodiments; paragraphs [0025] to [0027], [0034] and [0035]) and document 5 (paragraph 1. PDE3 Inhibitors and Anti-Platelet Activity) indicates that there are compounds which have platelet aggregation inhibiting activity which also have vascular intimal hyperplasia inhibiting activity, and document 4 (claims; embodiments; paragraphs [0025] to [0037]) and document 5 (paragraph 2. PDE3 Inhibitors and Vascular Intimal Hyperplasia Inhibiting Activity), and the entirety of documents 6 and 7 indicate that compounds having PDE3 inhibiting activity have vascular intimal hyperplasia inhibiting activity. That being the case, it would not require any particular creativity on the part of a person skilled in the art to attempt to employ the compounds set forth in documents 1 to 3 as vascular intimal hyperplasia inhibitors, in the same way as set forth in documents 4 to 7.

Therefore the invention set forth in claims 1 to 5 of this application does not involve an inventive step in the light of documents 1 to 7.